

Claims

I claim:

1. An apparatus for driving with a power driver a screwstrip comprising threaded fasteners, such as screws or the like, which are joined together in a strip comprising:

a housing;

an elongate driver shaft for operative connection to a power driver for rotation thereby and defining a longitudinal axis;

a slide body coupled to the housing for displacement parallel to the axis of the driver shaft between an extended position and a retracted position;

the slide body moving relative to the housing in a cycle of operation in which the slide body moves in a retracting stroke from the extended position to the retracted position and then moves in an extending stroke from the retracted position to the extended position,

the slide body having a guide channel for said screwstrip transverse to the axis,

a pawl member for engagement with the screwstrip to advance the screwstrip with movement of the pawl member towards the axis to place successive of the fasteners into alignment with the driver shaft for driving by the driver shaft,

a lever having a first end and a second end,

the lever pivotably mounted on the slide body intermediate its first end and its second end;

the first end of the lever coupled to the pawl member and the second end of the lever coupled to the housing whereby movement of the slide body axially relative to the housing (a)

towards the extended position moves the pawl member towards the axis and (b) away from the extended position moves the pawl member away from the axis,

the housing having an elongate cam slot having a first camming surface and a second camming surface opposite the first camming surface;

the second end of the lever carrying a cam pin member slidably engaged in the cam slot between the first and second camming surfaces;

the first camming surface being spaced from the second camming surface over at least a selected portion of the cam slot such that in each of a plurality of identical relative positions of the slide body and the housing:

- (a) when the cam pin member is engaged with the first camming surface, the lever places the pawl member at a first pawl position, and
- (b) when the cam pin member is engaged with the second camming surface, the lever places the pawl member at a second pawl position significantly different from the first pawl position.

2. An apparatus as claimed in claim 1 wherein the lever is pivotable relative to the slide body to permit the cam pin member to move between engagement with the first camming surface and engagement with the second camming surface.

3. An apparatus as claimed in claim 2 including a lever spring to bias the lever to pivot in a direction towards the first camming surface and to move the pawl member towards the axis.

4. An apparatus as claimed in claim 1 wherein: during movement of the slide body in a retracting stroke while the cam pin member is within the selected portion of the cam slot, the first

camming surface and the cam pin member are in engagement to move the pawl member away from the axis, and

during movement of the slide body in an extending stroke while the cam pin member is within the selected portion of the cam slot, the second camming surface and the cam pin member are in engagement to move the pawl member towards the axis against resistance to advance offered by a screwstrip engaged by the pawl member.

5. An apparatus as claimed in claim 3 wherein: during movement of the slide body in a retracting stroke while the cam pin member is within the selected portion of the cam slot, the bias of the lever spring acts on the lever to bias the first camming surface and the cam pin member in engagement to move the pawl member away from the axis, and

during movement of the slide body in an extending stroke while the cam pin member is within the selected portion of the cam slot, the second camming surface and the cam pin member are in engagement to move the pawl member towards the axis against resistance to advance offered by a screwstrip engaged by the pawl member greater than the bias of the lever spring.

6. An apparatus as claimed in claim 1 including a shuttle carried on the slide body moveable relative to the slide body transverse to the axis towards and away from the axis,

the shuttle carrying the pawl member for engagement with the screwstrip to advance the screwstrip with movement of the shuttle towards the axis.

7. An apparatus as claimed in claim 1 wherein over the selected portion of the cam slot the first and second camming surfaces have different profiles and are spaced by distances substantially greater than the width of the cam pin member.

8. An apparatus as claimed in claim 7 wherein other than over the selected portion of the cam slot, the first and second camming surfaces have substantially the same profiles spaced by a distance only marginally greater than the cam pin member.
9. An apparatus as claimed in claim 7 wherein the first and second camming surfaces over the selected portion of the cam slot include segments where the second camming surface is spaced from the first camming surface by a distance sufficient that compared to a position of the pawl member with the cam pin member engaging the first camming surface, the position of the pawl member with the cam pin member engaging the second camming surface is withdrawn away from the axis a distance at least equal to a diameter of the driver shaft.
10. An apparatus as claimed in claim 7 wherein when the slide body is in or proximate to the extended position, the cam pin member is received in a segment of the cam slot where the first camming surface and the second camming surface are spaced by a distance only marginally greater than the width of the cam pin member.
11. An apparatus as claimed in claim 10 wherein when the slide body is in and proximate to the retracted position, the cam pin member is in a segment of the cam slot in which the first camming surface and second camming surface are spaced by a distance only marginally greater than the width of the cam pin member.
12. An apparatus as claimed in claim 1 including a lever spring to bias the lever to pivot in a direction towards the first camming surface and to move the pawl member towards the axis.
13. An apparatus as claimed in claim 2 wherein: during movement of the slide body in a retracting stroke while the cam pin member is within the selected portion of the cam slot, the first

camming surface and the cam pin member are in engagement to move the pawl member away from the axis, and

during movement of the slide body in an extending stroke while the cam pin member is within the selected portion of the cam slot, the second camming surface and the cam pin member are in engagement to move the pawl member towards the axis against resistance to advance offered by a screwstrip engaged by the pawl member.

14. An apparatus as claimed in claim 1 wherein in a cycle of operation, the lever places the pawl member at different positions in a retracting stroke than in an extending stroke for identical position of the slide body relative to the housing.

15. An apparatus as claimed in claim 9 wherein in a cycle of operation, the lever places the pawl member at different positions in a retracting stroke than in an extending stroke for identical positions of the slide body relative to the housing.

16. An apparatus as claimed in claim 6 wherein the shuttle is slidable relative to the slide body in a linear slideway extending substantially normal to the axis.

17. An apparatus as claimed in claim 16 wherein the pawl member is pivotably mounted to the shuttle for engagement with the screwstrip to advance the screwstrip on movement of the shuttle towards the axis, and to pivot to pass over the screwstrip on movement of the shuttle away from the axis.